

Attorney Docket No.: PTQ-0058
Inventors: Van Eyk et al.
Serial No.: 10/824,027
Filing Date: April 14, 2004
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This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claim 1: (original) A method for identifying an agent or event capable of priming a cell for preconditioning and/or inducing preconditioning of a cell, tissue or organ comprising assessing the ability of the agent or event to modulate a preconditioning protein in a cell, tissue or organ.

Claim 2: (original) The method of claim 1 wherein the preconditioning protein is a protein of an OxPhos pathway, TCA cycle, a Ca^{2+} handling protein, a chaperone protein, or a protein selected from aldehyde dehydrogenase, NG-dimethylarginine dimethylaminohydrolase (DDAH) and the RNA binding protein regulatory subunit DJ-1.

Claim 3: (original) A method for diagnosing or monitoring in a subject preconditioning or ischemic, hypoxic, ischemic/reperfusion or ischemic/hypoxic conditions or the ability of a cell, tissue or organ to survive injury comprising measuring modulation of a preconditioning protein

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in the subject and comparing the measured modulation to modulation in a control.

Claim 4: (original) The method of claim 3 wherein the preconditioning protein is a protein of an OxPhos pathway, TCA cycle, a Ca^{2+} handling protein, a chaperone protein, or a protein selected from aldehyde dehydrogenase, NG-dimethylarginine dimethylaminohydrolase (DDAH) and the RNA binding protein regulatory subunit DJ-1.

Claim 5: (original) A composition for modulating a preconditioning protein in a cell comprising a pharmacological agent that induces preconditioning.

Claim 6: (original) The composition of claim 5 wherein the preconditioning protein is a protein of an OxPhos pathway, TCA cycle, a Ca^{2+} handling protein, a chaperone protein, or a protein selected from aldehyde dehydrogenase, NG-dimethylarginine dimethylaminohydrolase (DDAH) and the RNA binding protein regulatory subunit DJ-1.

Claim 7: (original) A method for modulating a preconditioning protein in a cell comprising contacting the

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cell with a composition or subjecting to an event that induces preconditioning.

Claim 8: (original) The method of claim 7 wherein the preconditioning protein is a protein of an OxPhos pathway, TCA cycle, a Ca^{2+} handling protein, a chaperone protein, or a protein selected from aldehyde dehydrogenase, NG-dimethylarginine dimethylaminohydrolase (DDAH) and the RNA binding protein regulatory subunit DJ-1.

Claim 9: (original) A composition for priming a cell for preconditioning and/or preconditioning a tissue or organ and preventing cell injury and/or cell death comprising an agent that modulates a preconditioning protein in a cell, tissue or organ.

Claim 10: (original) The composition of claim 9 wherein the preconditioning protein is a protein of an OxPhos pathway, TCA cycle, a Ca^{2+} handling protein, a chaperone protein, or a protein selected from aldehyde dehydrogenase, NG-dimethylarginine dimethylaminohydrolase (DDAH) and the RNA binding protein regulatory subunit DJ-1.

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Claim 11: (original) A method for priming a cell for preconditioning and/or preconditioning a tissue or organ and preventing cell injury and/or cell death comprising modulating in a cell, tissue or organ a preconditioning protein.

Claim 12: (original) The method of claim 11 wherein the preconditioning protein is a protein of an OxPhos pathway, TCA cycle, a Ca^{2+} handling protein, a chaperone protein, or a protein selected from aldehyde dehydrogenase, NG-dimethylarginine dimethylaminohydrolase (DDAH) and the RNA binding protein regulatory subunit DJ-1.

Claim 13: (new) The method of claim 1 wherein the agent or event identified modulates the preconditioning protein in the cell, tissue or organ and leads to a change via cross-talking, a feed-back mechanism or a signaling mechanism which effects the first window of preconditioning, the second window of preconditioning or both windows of preconditioning of a cell.

Claim 14: (new) The method of claim 1 wherein the agent or event identified modulates the preconditioning protein in

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the cell, tissue or organ and leads to a change in function of the protein complex or pathway of which the modified protein is a member.

Claim 15: (new) The method of claim 1 wherein the agent or event identified modifies a mitochondrial protein.

Claim 16: (new) The method of claim 1 wherein the agent or event identified increases a level of one or more of IDH, succinyl CoA ligase, a 23 kDa mitochondrial precursor subunit of Complex I, a 24 kDa mitochondrial precursor subunit of Complex I, a 30 kDa mitochondrial precursor subunit of Complex I, a δ chain mitochondrial precursor of an F_1 portion, a d chain mitochondrial precursor of a F_0 portion of Complex V, prohibitin, ADP ribosyl hydrolase, HSP27 and RNA binding protein regulatory subunit (DJ-1).

Claim 17: (new) The method of claim 1 wherein the agent or event identified decreases a level of one or more of dihydrolipoamide succinyltransferase, core protein I of Complex III, metaxin 2 and sarcalumenin.

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Claim 18: (new) The method of claim 1 wherein the agent or event identified changes a level of DDAH.

Claim 19: (new) The method of claim 1 wherein the agent or event identified increases post-translational modification of β chain mitochondrial precursor of the F₁ portion of Complex V, protein X, or aconitase hydratase (aconitase).

Claim 20: (new) The method of claim 1 wherein the agent or event mimics modulation of the preconditioning proteins by adenosine or diazoxide.